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PEOPLE'S REPUBLIC OF CHINA**

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**Protection against electric shock - Common aspects for  
installations and equipment**

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## Preface

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GB/T 17045-2008 "General Parts of Electric Shock Protection Devices and Equipment", and is consistent with GB/T 17045-2008

The main technical changes are as follows.

---The content of IEC 60449 (Voltage Section of Building Electrical Installations) has been added (see 4.2);

---Added the content that distinguishes regulations and measures well (see 3.44, 3.45 and Appendix A);

---Added effects other than ventricular fibrillation (see 4.6 and 7.6.5);

---Added additional protection content (see 5.5 and 6.10);

---Added the definition of extra low voltage (ELV) as part of low voltage (LV) (see 4.2);

---Added the requirements for isolating electrical appliances suitable for low-voltage automatic cut-off of power (see 8.4);

--- Amend and move the current-related requirements in the protective conductor to the standard text (see 7.6.3).

The translation method used in this standard is equivalent to IEC 61140.2016 "General

Parts of Electric Shock Protection Devices and Equipment".

The Chinese documents that have consistent correspondence with the normatively cited international documents in this standard are as follows.

- GB/T 156-2017 standard voltage (IEC 60038.2009, MOD);
- GB/T 311.1-2012 Insulation coordination Part 1.Definitions, principles and rules (IEC 60071-1.2006, MOD);
- GB/T 311.2-2013 Insulation coordination Part 2.Guidelines for use (IEC 60071-2.1996, MOD);
- GB/T 1985-2014 high voltage AC isolating switch and grounding switch (IEC 62271-102.2001 A1.2011, MOD);
- GB/T 4026-2019 Basic and safety rules for human-machine interface logo identification, equipment terminals, conductor terminals and conductor identification (IEC 60445.2017, IDT);
- GB/T 4208-2017 enclosure protection class (IP code) (IEC 60529.2013, IDT);
- GB/T 5465.2-2008 Graphical symbols for electrical equipment Part 2.Graphical symbols (IEC 60417DB.2007, IDT);
- GB/T 12113-2003 Measurement method of touch current and protective conductor current (IEC 60990.1999, IDT);
- GB/T 13870.5-2016 The effect of electric current on humans and livestock Part 5.The contact voltage threshold of physiological effects (IEC TR60479-5.2007, IDT);
- GB/T 16499-2017 Preparation of electrical and electronic safety publications and application guidelines for basic safety publications and multi-disciplinary shared safety publications (IEC Guide104.2010, NEQ);
- GB/T 16935 (all parts) Insulation coordination of equipment in low-voltage systems [IEC 60664 (all parts)];
- GB/T 20002.4-2015 standard drafting of specific content. Part 4.Standards involving safety content (ISO /IEC Guide51.2014, MOD).

This standard has made the following editorial changes.

- Change Appendix B of IEC 61140.2016 to term index;
- Since the content of Appendix C of IEC 61140.2016 has nothing to do with my country, it is deleted in this standard.

This standard was proposed and managed by the National Standardization Technical Committee for Building Electrical Installations (SAC/TC205).

Drafting organizations of this standard. CMC China Design and Research Institute Co., Ltd., Unitech (China) Co., Ltd., Schneider Electric (China)

Co., Ltd., Siemens (China) Co., Ltd., Legrand Low Voltage Electrical (Wuxi) Co., Ltd., Xi'an Zhiheng Electrical Technology Co., Ltd.

## 1 Scope

This standard is a basic safety publication, mainly used by technical committees in accordance with IEC Guide104 and ISO /IEC Guide51

The principle of writing standards.

This standard is not used as an independent standard.

According to IEC Guide104, technical committees need to use basic safety publications such as IEC 61140 when drafting, revising or revising their publications.

This standard applies to electric shock protection for humans and livestock. Its purpose is to give the common electrical installations, systems and equipment, or between them

Basic principles and requirements for cooperation. Regarding the voltage or current value or type of current, this standard does not limit, and the frequency is required to not exceed 1000Hz.

Some clauses in this standard involve low and high voltage systems, devices and equipment. The rated voltage of the low voltage of this standard does not exceed AC 1000V or 1500V DC. The rated voltage of high voltage exceeds AC 1000V or DC 1500V.

It needs to be pointed out that in order to effectively design and select protection measures, it is necessary to consider the possible voltage types and waveforms, that is, AC or DC

Voltage, sine, transient, phase control, superimposed DC, and possible hybrids of these waveforms. The device or equipment may affect the voltage wave

Shape, such as a converter or frequency converter. The current under normal and fault conditions depends on the above voltage.

## 2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this article

Pieces. For undated references, the latest version (including all amendments) applies to this document.

GB/T 13870.1-2008 Effect of electric current on humans and livestock Part 1.General part (IEC TS60479-1:2005, IDT)